

## REMARKS

The Patent and Trademark Office Action, dated June 29, 2006, has been carefully considered. The Examiner has rejected all claims that were pending on the continued examination filing. In rejecting pending claims 2, 4 - 10, 12 and 16 - 18, the Examiner outlined reasons for the rejection in his comments, paragraphs 3 - 14. For convenience of reference, Applicant's remarks follow the paragraphs of the Examiner's comments.

§3. Claims 2 and 3 were rejected by the Examiner under 35 U.S.C. §102(e) as anticipated by Shibata, et al. Shibata, et al. discloses an elevated frame apparatus cantilevered at one side by a single support post. The elevated frame has an X-Y transport mechanism and a suspended tube gripper. Pillow bearings 70 and 72 are not post supports. To clarify the structural distinctions, Applicant's tube rack bed and support platform are mounted in the perimeter frame, a feature not disclosed in Shibata, et al. Note, the details of the transport mechanisms of Shibata, et al. are described only superficially (col. 7, lines 36-39). Additionally, the tube parking holder of Applicant has a plurality of tube holding locations, an advantage for tube sorting. Note, the station 120 identified as 44 in Shibata, et al. is a tube spinning station for tube identification, not a parking station as claimed in amended claim 2.

§4. Claims 2, 3, 6 and 8 were rejected under 35 U.S.C. §103(a) as unpatentable over Yamakawa, et al. in view of Warren, et al. Yamakawa, et al. discloses an overhead X-Y-Z mechanism with a single-post, cantilever support of a cross beam with Y-Z carriage having a tube picker. Warren, et al. discloses an X-Y-Z mechanism not for a tube handling device, but for a petri dish feeder and

harvester. While a cross beam with a Y-Z elevator carriage is disclosed, the beam is supported over the sample bed by two blocks, one of which is connected to a drive belt. There is no suggestion in either reference to combine selected features from one reference, in a somewhat different art, with the other. Furthermore, the drive assembly of Applicant is in engagement with each of the post supports. This avoids canting of the mechanism when driven at one end as shown by Warren, et al. Warren, et al. has tracking means under each block, but the drive means is at one end.

§5. Claim 4 was rejected under 35 U.S.C. §103 as unpatentable over Shibata, et al. in view of Boje, et al. Boje, et al. discloses a complex tube handler and storage unit. Boje adds the concept of a tube conveyor having a track that extends between various testing work stations. This apparatus differs from the Applicant's inclusion of a platform adjacent to the tube rack bed that has a shuttle holder. How one skilled in the art can mate the complex structure of Shibata et al. with the complex structure of Boje, et al., is not suggested. If the selected feature of Boje were added to Shibata, the apparatus of Applicant as currently claimed would still not be taught.

§6. Claims 2 - 4 and 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Boje, et al. in view of Warren, et al. Although certain of the complexities of Boje, et al. are shown, details of the robotic unit 32 are not shown or described. Any result of a combination of Boje, et al. and Warren, et al. would be speculative. Potentially, the structure in Boje, et al. could be highly accurate as it is.

§7. Claims 5 and 6 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shibata, et al. in view of Weyrauch, et al. Shibata, et al. was

designed for blood and its bar code reader at the identification station requires tubes be parked for spinning and reading. Weyrauch, et al. discloses a reagent bottle reader with a reagent bottle holder in the form of a carousel that retains reagent bottles with a code label on the bottom. The bottles are read when the carousel is rotated to locate select bottles over the reader. As amended, Applicant's claims 5 and 6 describe the more versatile apparatus of Applicant that utilizes a pick head unit to position a tube over the sensor. Substituting the identification system of Weyrauch, et al. for that of Shibata, et al. would not obviate the system of Applicant. The system of Weyrauch, et al. is more closely related to the underside bed scanner of added claim 19.

§8. Claim 7 was rejected under 35 U.S.C. §103(a) as unpatentable over Shibata, et al. in view of Weyrauch, et al. and Hardgrave, et al. Hardgrave, et al. in a totally unrelated field, that of bag handling, suggests the interchangeability of bar code tags and RFID tags. Applicant disputes that they are necessarily recognized equivalents. Furthermore, the system of reading using the picker as currently claimed is not met by apparatus resulting from a selective combination and substitution of features in Shibata, Weyrauch and Hardgrave.

§9. Claim 8 was rejected under 35 U.S.C. §103(a) as unpatentable over Shibata, et al. in view of Guiremand. Guiremand discloses a robotic control interface and in a shotgun statement at the end of the specification suggests that in controlling a milling machine, one could provide functions for relating certain tool bits with different tool holders. In Shibata, et al., a liquid extraction probe 48 is already disclosed. Guiremand does not suggest it should be replaced with a picker, or that the picker should be replaced with the probe.

§10. Claims 9, 12, 16 and 17 were rejected as unpatentable over Shibata, et

al. in view of Ragard. Neither Shibata, et al., nor Ragard, disclose apparatus that would suggest the problem. For the spacious holders of Shibata, et al., the disclosed picker is adequate. Furthermore, the bulky fingers of Ragard do not suggest their advantage for tightly spaced tubes in a tube rack. The number of fingers and structure of the fingers are particularized in the claims and the selection and substitution is not suggested in the references. There is no suggestion that there was a recognition of the problem, thus at least claims 9 and 12 are not obvious from Ragard.

§11. Claims 9, 12, 16 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yamakawa, et al. in view of Warren et al. and Ragard. In addition to the objection of combining Yamakawa and Warren, et al., the addition of a four prong picker is not suggested as advantageous for substitution. The two prong picker, as shown in Figure 7 of Yamakawa, is fully adequate to perform the desired function. Without recognition of the problem, there is no case for the substitution.

§12. Claim 10 was rejected under 35 U.S.C. §103(a) as being unpatentable over Shibata, et al. in view of Boje, et al. Applicant relies on the amendments of claim 2 for patentability of claim 10.

§13. Claim 18 was rejected under 35 U.S.C. §103(a) as being unpatentable over Shibata, et al. in view of Ragard and Norris, et al. Norris, et al. discloses a cartridge picker for imaging of polymer arrays. While Norris, et al. uses a side displacement solenoid 170, the element is introduced after the shotgun statement referenced by the Examiner that relates to the transport mechanism. No suggestion for the substitution can be inferred from Norris, et al.

§14. Claim 18 was also rejected under 35 U.S.C. §103(a) as being

unpatentable over Yamakawa, et al. in view of Warren, et al., Ragard, and Norris, et al. Again, the picker mechanism of Yamakawa, et al. is adequate for the task and the general shotgun language of Norris, et al. would not suggest a substitution.

In conclusion, the tube picking art appears to be a crowded art. The very fact that there are numerous features that distinguish the various devices is a testament that different applications, though similar, require different features and different apparatus to implement the selected features. While context and environment are difficult to structurally claim, the design of a relatively inexpensive desktop robotic tube handler required a strategic utilization of space and arrangement of components. Although similar components exist elsewhere in the art or related art, this does not automatically mean their modification and incorporation in the arrangement specified by Applicant is obvious to one of ordinary skill in the art at the time Applicant's invention was made. Achieving the added precision to handle densely packed tubes in a compact machine requires a deliberate selection and arrangement of components. Despite the ability to patch together a hindsight assemblage of selected components, the assemblage still lacks the advantages and functions of the device claimed by Applicant. Applicant's apparatus is a patentable advance in the art.

Applicant requests that the claims as amended be reviewed with a view toward allowance.

Respectfully submitted,



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